

Detailed Description Text - DETX (18):

FIG. 1 is a block diagram summarizing signal processing operations involved in embedding and reading a watermark. There are three primary inputs to the embedding process: the original, digitized signal 100, the message 102, and a series of control parameters 104. The control parameters may include one or more keys. One key or set of keys may be used to encrypt the message. Another key or set of keys may be used to control the generation of a watermark carrier signal or a mapping of information bits in the message to positions in a watermark information signal.

Detailed Description Text - DETX (19):

The carrier signal or mapping of the message to the host signal may be encrypted as well. Such encryption may increase security by varying the carrier or mapping for different components of the watermark or watermark message. Similarly, if the watermark or watermark message is redundantly encoded throughout the host signal, one or more encryption keys can be used to scramble the carrier or signal mapping for each instance of the redundantly encoded watermark. This use of encryption provides one way to vary the encoding of each instance of the redundantly encoded message in the host signal. Other parameters may include control bits added to the message, and watermark signal attributes (e.g., orientation or other detection patterns) used to assist in the detection of the watermark.

Detailed Description Text - DETX (20):

Apart from encrypting or scrambling the carrier and mapping information, the embedder may apply different, and possibly unique carrier or mapping for different components of a message, for different messages, or from different watermarks or watermark components to be embedded in the host signal. For example, one watermark may be encoded in a block of samples with one carrier, while another, possibly different watermark, is encoded in a different block with a different carrier. A similar approach is to use different mappings in different blocks of the host signal.

Detailed Description Text - DETX (25):

The watermark detector 110 operates on a digitized signal suspected of containing a watermark. As depicted generally in FIG. 1, the suspect signal may undergo various transformations 112, such as conversion to and from an analog domain, cropping, copying, editing, compression/decompression, transmission etc. Using parameters 114 from the embedder (e.g., orientation pattern, control bits, key(s)), it performs a series of correlation or other operations on the captured image to detect the presence of a watermark. If it finds a watermark, it determines its orientation within the suspect signal.

Detailed Description Text - DETX (31):**2.1 Image Watermark Embedder**